Comparisons of Job Characteristics

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 82

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Engineering and Technology	5.7	23.6	21.5	0	Current knowledge level may be sufficient
Computers and Electronics	8.4	17.3	13.4	<<	Extensive education and/or training may be required
Mechanical	6.8	17.3	18.1	0	Current knowledge level may be sufficient
Production and Processing	6.0	13.2	14.2	0	Current knowledge level may be sufficient
Public Safety and Security	6.9	13.2	7.5	<<	Extensive education and/or training may be required
Design	5.2	12.2	21.0	>>	Current knowledge level is likely more than sufficient
Law and Government	5.9	10.7	4.6	<<	Extensive education and/or training may be required
Physics	4.3	9.7	15.3	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 49

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Quality Control Analysis	5.9	11.1	11.1	0	Current skill level may be sufficient
Operation Monitoring	6.6	11.0	10.4	0	Current skill level may be sufficient
Science	4.5	9.7	13.6	>>	Skill level is likely more than sufficient
Troubleshooting	4.5	9.2	9.5	0	Current skill level may be sufficient

Equipment Maintenance	3.5	8.9	4.5	<<	Extensive development of skills in this area may be required
Repairing	3.4	7.2	3.6	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	6.1	6.5	0	Current skill level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 90

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Problem Sensitivity	11.1	13.6	13.6	0	Current ability level may be sufficient
Information Ordering	9.9	11.6	15.4	>>	Current ability level is likely more than sufficient
Visualization	7.5	10.1	12.7	>	Current ability level is likely sufficient
Flexibility of Closure	7.8	9.6	10.3	0	Current ability level may be sufficient
Visual Color Discrimination	6.4	8.7	9.1	0	Current ability level may be sufficient
Hearing Sensitivity	5.6	8.1	8.1	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 83

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Work Activities	Exclusivity of Activity
Analyze engineering test data	71
Analyze technical data, designs, or preliminary specifications	47
Calculate engineering specifications	64
Communicate technical information	4
Conduct performance testing	66
Confer with engineering, technical or manufacturing personnel	25
Develop or maintain databases	30
Develop plans for programs or projects	31
Draw prototypes, plans, or maps to scale	57
Evaluate engineering data	60
Examine engineering documents for completeness or accuracy	62
Explain complex mathematical information	30
Improve test devices or techniques in manufacturing, industrial or engineering setting	75
Inspect facilities or equipment for regulatory compliance	51

Prepare technical reports or related documentation	22
Read blueprints	10
Read schematics	34
Read technical drawings	7
Test equipment as part of engineering projects or processes	67
Understand engineering data or reports	48
Use computers to enter, access or retrieve data	3
Use drafting or mechanical drawing techniques	50
Use scientific research methodology	21
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 73

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Aerospace Engineering and Operations Technicians (17-3021)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Electrical measuring and testing equipment	7
Indicating and recording instruments	2
Industry specific software	1
Laboratory ovens and accessories	15
Length and thickness and distance measuring instruments	2
Lifting equipment and accessories	3
Light and wave generating and measuring equipment	4
Liquid and gas flow measuring and observing instruments	15
Machine tools	7
Machinery for working wood and stone and ceramic and the like	12
Metals and metallurgy and structural materials testing instruments	15
Non destructive examination equipment	13
Pneumatic tools	8
Power tools	2
Pressure measuring and control instruments	10
Soldering and brazing and welding machinery and supplies	6
Spectroscopic equipment	10
Temperature and heat measuring instruments	6
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.